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ABSTRACT

5 A packet-switched communication network in accordance with the invention provides a guaranteed minimum bandwidth between pairs of Packet Switches by defining Service Level Agreements (SLAs). An SLA is defined by at least a source identifier, a destination identifier, and a minimum data rate although other information can also be used. Upon arrival at certain networked nodes, packets are classified according to an SLA by reading the source and destination addresses in the packet. Once classified, the packets are placed in a queue and scheduled for transmission. A scheduler ensures that packets are transmitted at the minimum defined data rate for the SLA. The scheduler may use a statistical multiplexing method, such as deficit round robin, or deficit golden ratio, which is part of the present invention. The deficit golden ratio method assures a minimum rate to packets for a particular SLA, but minimizes jitter and delay. Further, the present invention implements congestion control that does not require nodes to be entirely turned off in congested conditions.

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